

**Remarks**

This Application has been carefully reviewed in light of the Office Action mailed August 26, 2005. Claims 1-30 are pending in this application. Claims 1-29 are rejected in the Office Action. For at least the reasons discussed below, Applicants respectfully request reconsideration and favorable action in this case.

**Allowable Claims**

Applicants note with appreciation the Examiner's indication that Claim 30 is allowable.

**Section 112 Rejections**

The Office Action rejects Claim 17 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter of which applicants regard as their invention. The Office Action suggests that the "source cannot both comprise and be proximate to the upstream amplifier." *See Office Action*, page 2, ¶ 2. Attorney for Applicants (Chad C. Walters, Reg. No. 48,022) discussed this rejection with the Examiner in a telephone conference on November 2, 2005 and proposed amending Claims 1 and 16 to recite "a source at least proximate an upstream amplifier." The Examiner indicated this amendment would overcome the rejection. Applicants have made these amendments herein. Therefore, Applicants respectfully submit withdrawal of the rejection under 35 U.S.C. § 112, second paragraph.

**Section 102 Rejections - Sato**

The Office Action rejects Claims 1-6, 8-13, 17, 18-23, and 25-27 under 35 U.S.C. § 102(b) as being anticipated over U.S. Patent No. 6,229,631 issued to Sato et al. ("*Sato*"). Applicants respectfully traverse these rejections for the reasons discussed below.

To anticipate a claim, each and every limitation must be found in a reference. *See* MPEP § 2131. "The identical invention must be shown in as complete detail as is contained in the . . . claim." *Richardson v. Suzuki Motor Co.*, 9 USPQ 2d 1913, 1920 (Fed. Cir. 1989). In addition, "[t]he elements must be arranged as required by the claim . . . ." *In re Bond*, 15 USPQ 2d 1566 (Fed. Cir. 1990).

The Office Action considers elements of the claims following “operable to” language as functional limitations and states that “[s]ince the structural limitations have been met by the prior art, the Examiner has reason to believe that the function limitations can be performed by the prior art structure.” *Office Action*, pages 3-4. Attorney for Applicants discussed this issue with the Examiner in the telephone conference of November 2, 2005 and agreed, at the Examiner’s suggestion, to amend the structural claim elements to recite “configured for.” Applicants have made these amendments herein.

Claim 1 recites “using the stable signal at a downstream amplifier coupled to the optical span to automatically set a gain of the downstream amplifier.” Claim 16 recites similar elements. The Office Action suggests that *Sato* discloses this element at column 10, lines 5-6 and figure 33. *Office Action*, page 3. *Sato* discloses that repeaters 120 are controlled by a supervisory network that collects various parameters from transmitter/receiver 110 and repeaters 120. *Sato*, col. 10, lines 2-6. *Sato* does not disclose, teach or suggest using a stable signal to automatically set the gain of a downstream amplifier. Therefore for at least this reason, Applicants respectfully submit that Claims 1 and 16 are patentable over the cited art used in the rejection and request that the rejection of these claims be withdrawn.

Claims 2-6 and 8-13 depend, either directly or indirectly, from Claim 1, and Claims 17-23 and 25-27 depend, either directly or indirectly, from Claim 16. Therefore, for at least the reasons discussed above with respect to Claims 1 and 16 Applicants respectfully submit Claims 2-6, 8-13, 17-23, and 25-27 are patentable over the cited art used in the rejection and request that the rejection of these claims be withdrawn.

Additionally, Claims 3 and 18 recite that “the stable signal comprises amplified spontaneous emission (ASE) of the upstream amplifier.” The Office Action suggests that *Sato* discloses this element at column 7 lines 60-65. *Office Action*, page 3. *Sato* discloses that “[e]ach optical amplifier supplies estimation parameters of a gain tilt and a distortion, caused by an ASE” and “[f]or the optical fiber amplifiers . . . signal quality is estimated based on its gain and ASE noise.” *Sato*, col. 7 lines 54-57 and 61-63 (emphasis added). *Sato* also teaches the use of filters to remove ASE noise. *Sato* col. 7, lines 51-53. *Sato* does not

disclose, teach or suggest including ASE in a stable signal used to automatically set the gain of an amplifier. Therefore for these additional reasons Applicants respectfully submit that Claims 3 and 18 are patentable over the cited art used in the rejection and request that the rejection of these claims be withdrawn.

Additionally, Claims 4 and 21 recite communicating power level information of the stable signal to the downstream amplifier to be used to automatically set the gain of the downstream amplifier or similar elements. Claim 5 depends from Claim 4, and Claim 22 depends from 21. Nowhere does *Sato* disclose, teach or suggest communicating power level information of a stable signal to be used to automatically set the gain of the amplifier. Therefore, for at least this additional reason Applicants respectfully submit that Claims 4, 5, 21, and 22 are patentable over the cited art used in the rejection and request that the rejection of these claims be withdrawn.

Additionally, Claims 12 and 13 recite activating a setup mode and transitioning to a normal mode. Claims 19 and 20 recite similar elements. Nowhere does *Sato* disclose, teach or suggest that the repeaters have a setup mode or that they can transition into a normal mode. In fact, *Sato* discloses “perform[ing] monitor/control operations . . . on a constant cycle.” *Sato*, col. 10 lines 31-33 (emphasis added). Therefore, for at least this additional reason Applicants respectfully submit that Claims 12, 13, 19, and 20 are patentable over the cited art used in the rejection and request that the rejection of these claims be withdrawn.

Additionally, Claim 9 recites “transmitting a request . . . for transmission of the stable signal for setting gain automatically.” Claim 26 recites similar elements. The Office Action suggests that *Sato* disclose this feature in column 6, lines 25-35. *Office Action*, page 3. However, *Sato* discloses that the workstation 130 monitors the estimation parameters “on a constant cycle.” *Sato*, col. 10, lines 38-41. Nowhere does *Sato* disclose, teach or suggest transmitting a request for transmission of a stable signal for setting the gain automatically. Therefore, for at least this additional reason Applicants respectfully submit that Claims 9 and 26 are patentable over the cited art used in the rejection, and request that the rejection of these claims be withdrawn.

Additionally, Claims 6 and 23 recite “wherein the stable signal comprises a signal having a power variation over time of approximately 1 dB or less,” and Claims 8 and 25 recite transmitting “a stable signal . . . at a power level such that the signal is received at the downstream amplifier at a power level of at least approximately -30 dBm.” The Office Action suggests that *Sato* discloses these features in figure 2. *Office Action*, page 3. However, figure 2 of *Sato* merely “show[s] a level-diagram used for explaining the operation of the optical transmission system . . . .” *Sato*, col. 2, lines 59-60. Nowhere does *Sato* disclose, teach or suggest the use of a signal with approximately 1 dB or less of power variation over time, or a signal that is received at a power level of at least approximately -30 dBm. Therefore, for at least these additional reasons Applicants respectfully submit that Claims 6, 8, 23 and 25 are patentable over the cited art used in the rejection and request that the rejection of these claims be withdrawn.

Additionally, Claim 10 recites “notifying the upstream amplifier that the gain of the downstream amplifier has been set.” The Office Action has not cited any portion of *Sato* that discloses, teaches or suggests such a limitation. Applicants contend that Claim 10 is patentable because while *Sato* may disclose amplifiers communicating information as to their parameters, this communication is sent to an estimator, and there is nothing in *Sato* that indicates that an upstream amplifier is notified that the gain of a downstream amplifier has been set. *See Sato*, col. 7, line 50 - col. 8 line 2. For this reason Applicants respectfully submit that Claim 10 is patentable and request that the rejection be withdrawn.

#### **Section 102 Rejections - Fatehi**

The Office Action also rejects Claims 1, 7, 16, and 24 under 35 U.S.C. § 102(b) as being anticipated over U.S. Patent No. 6,377,394 issued to Fatehi (“*Fatehi*”). Applicants note that U.S. Patent No. 6,377,394 was issued to Drake, not Fatehi, but that the reference portions cited by the Office Action appear to be to *Fatehi*. For example U.S. Patent No. 6,377,394 does not include a figure 5 as indicated by the Office Action on page 4. Therefore, Applicants assume that *Fatehi* (U.S. Patent No. 5,673,142) is to be the cited source and thus make their arguments based on that assumption. If this assumption is incorrect, Applicants respectfully request clarification. Applicants respectfully traverse these rejections for the reasons discussed below.

Claim 16 recites a source at least proximate an upstream amplifier that transmits a stable signal and a downstream amplifier that uses the stable signal to automatically set the gain of the downstream amplifier. Claim 1 recites similar elements. The Office Action contends that *Fatehi* discloses these elements in figures 2 and 5. *Office Action*, page 4. *Fatehi*, through figures 2 and 5, discloses the internal components of an erbium doped fiber amplifier (EDFA) where “the amplifier is generally comprised of a long piece of rare-earth material doped fiber to which a fiber optic pump source is coupled via a wavelength divisional multiplexer (WDM) coupler.” *Fatehi*, Abstract. Figure 2 depicts a typical EDFA, wherein the length L is made of erbium doped fiber. *Fatehi*, col. 2, lines 54-56. It is through the length L of erbium doped fiber that the signal is amplified. *Fatehi*, col. 2, lines 56-65. Figure 5 is similar to figure 2 except that an input tap 64 has been inserted inside of the length of doped fiber to increase the effectiveness of the signal from the input tap 64 by having the signal pass through a small portion of the length of doped fiber thus weakly amplifying it. *Fatehi*, col. 3, lines 61-63. Figure 5 also includes an output tap 530, AGC 510 and input monitor 42. The AGC receives signals from the input tap 64 and the output tap 530. Nowhere does *Fatehi* disclose a source at least proximate an upstream amplifier that transmits a stable signal. Therefore, for at least these reasons Applicants respectfully submit that Claims 1 and 16 are patentable over the cited art used in the rejection and request that the rejection of these claims be withdrawn.

Claim 7 depends from Claim 1 and Claim 24 depends from Claim 16. Therefore, for at least the reasons discussed above with respect to Claims 1 and 16, Applicants respectfully submit that Claims 7 and 24 are patentable over the cited art used in the rejection and request that the rejection of these claims be withdrawn.

Additionally, Claims 7 and 24 recite that the stable signal includes a broadband signal. Nowhere does *Fatehi* recite the use of a broadband signal. Therefore, for at least this additional reason Applicants respectfully submit that Claims 7 and 24 are patentable over the cited art used in the rejection and request that the rejection of these claims be withdrawn.

**Section 103 Rejections**

The Office Action rejects Claims 14-15, and 28-29 under 35 U.S.C. § 103(a) as being unpatentable over *Sato* in view of U.S. Patent Publication No. 2004/0071392 issued to Lauder ("*Lauder*"). Applicants respectfully traverse these rejections for the reasons discussed below.

Claims 14 and 15 depend from Claim 1, and Claims 28 and 29 depend from Claim 16. Therefore, for at least the reasons discussed above with respect to Claims 1 and 16, Applicants respectfully submit that Claims 14, 15, 28, and 29 are patentable over the cited art used in the rejection and request that the rejection of these claims be withdrawn.



**CONCLUSION**

Applicants have made an earnest attempt to place this case in condition for allowance. For the foregoing reasons, and for other reasons clearly apparent, Applicants respectfully request full allowance of all pending claims.

If the Examiner believes that a telephone conference would advance prosecution of this Application, the Examiner may call Chad C. Walters, Attorney for Applicants, at 214.953.6511.

Although Applicants believe no fees are due, the Commissioner is hereby authorized to charge any fees or credit any overpayments to Deposit Account No. 02-0384 of Baker Botts L.L.P.

Respectfully submitted,  
BAKER BOTTS L.L.P.  
Attorneys for Applicants



Chad C. Walters  
Reg. No. 48,022

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Correspondence Address:

Customer Number:

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